IN THE UNITED STATES

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APPEAL BRIEF

Pursuant to the requirements of 37 C.F.R. § 41.37, please consider this document as Appellants' Brief in the present application currently before the Board of Patent Appeals and Interferences (hereinafter "the Board").

I. Real Party in Interest

The subject application is owned by Google Inc. of Mountain View, California.

II. Related Appeals and Interferences

There are no known related appeals or interferences that may directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. Status of Claims

Claims 1-28 are pending and stand finally rejected in the Final Office Action dated October 26, 2009 (hereinafter referred to as the "Office Action").

The rejection of claims 1-28 is hereby appealed.

IV. Status of Amendments

All claim amendments submitted to the Examiner during prosecution of the present application have been entered.   The claims involved in the present appeal are presented in Section VIII of this document.

V. Summary of the Claimed Subject Matter

The claimed invention is generally directed to methods, systems, and computer program products for reranking a merged search result of multiple queries based on a user input (See, e.g., Spec. p. 18, para. [0047], pp. 28-30, para. [0073, 75, 76], p. 42, para. [0100], and Figures 3, 7).

Claim 1: A computer-implemented method for ranking information (See, e.g., Spec. p. 14, para. [0035], and Figure 1), comprising: receiving 702 a plurality of query results of a plurality of search queries that were submitted separately (See, e.g., Spec. pp. 28-30, para. [0073,

75, 76], p. 42, para. [0100], and Figures 3, 7); merging 704 the plurality of query results into a

merged query result, the merged query result being associated with the plurality of search queries

(See, e.g., Spec. pp. 28-30, para. [0073, 75, 76], p. 42, para. [0100], and Figures 3, 7);

determining a first ranking sequence of the merged query result (See, e.g., Spec. p. 30, para.

[0076], and Figure 3); presenting 706 the merged query result to a user according to the first

ranking sequence (See, e.g., Spec. p. 12, para. [0029], p. 30, para. [0076], pp. 42-43, para.

[0101], and Figure 3); identifying 708 an input signal from the user indicating an interest in a

first piece of information in the merged query result (See, e.g., Spec. p. 43, para. [0102], and

Figure 7); identifying 710 a search query from the plurality of search queries associated with the

merged query result, the identified search query being associated with a query result including

the first piece of information, the query result from among the plurality of query results (See,

e.g., Spec. pp. 43-44, para. [0102-103], and Figure 7); adjusting a query factor associated with

the identified search query responsive to the input signal (See, e.g., Spec. pp. 16-18, para. [0043-

45]); locating a second piece of information in the query result associated with the identified

search query (See, e.g., Spec. p. 18, para. [0047], pp. 43-44, para. [0103]); determining a score

for the second piece of information based at least in part on the query factor associated with the

identified search query (See, e.g., Spec. p. 18, para. [0047], pp. 43-44, para. [0103]); determining

a second ranking sequence of the merged query result based at least in part on the score (See,

e.g., Spec. p. 18, para. [0047], p. 30, para. [0076], pp. 43-44, para. [0103], pp. 49-50, para.

[0115]); and presenting the merged query result to the user according to the second ranking

sequence (See, e.g., Spec. p. 12, para. [0029], p. 20, para. [0052], pp. 42-43, para. [0101]).

<u>Claim 18</u>: A computer program product having a computer-readable storage medium

having executable computer program instructions tangibly embodied thereon for ranking

information (See, e.g., Spec. p. 14, para. [0035], and Figure 1), the executable computer program instructions comprising instructions for: receiving 702 a plurality of query results of a plurality of search queries that were submitted separately (See, e.g., Spec. pp. 28-30, para. [0073, 75, 76], p. 42, para. [0100], and Figures 3, 7); merging 704 the plurality of query results into a merged query result, the merged query result being associated with the plurality of search queries (See, e.g., Spec. pp. 28-30, para. [0073, 75, 76], p. 42, para. [0100], and Figures 3, 7); determining a first ranking sequence of the merged query result (See, e.g., Spec. p. 30, para. [0076], and Figure 3); presenting 706 the merged query result to a user according to the first ranking sequence (See, e.g., Spec. p. 12, para. [0029], p. 30, para. [0076], pp. 42-43, para. [0101], and Figure 3); identifying 708 an input signal from the user indicating an interest in a first piece of information in the merged query result (See, e.g., Spec. p. 43, para. [0102], and Figure 7); identifying 710 a search query from the plurality of search queries associated with the merged query result, the identified search query being associated with a query result including the first piece of information, the query result from among the plurality of query results (See, e.g., Spec. pp. 43-44, para. [0102-103], and Figure 7); adjusting a query factor associated with the identified search query responsive to the input signal (See, e.g., Spec. pp. 16-18, para. [0043-45]); locating a second piece of information in the query result associated with the identified search query (See, e.g., Spec. p. 18, para. [0047], pp. 43-44, para. [0103]); determining a score for the second piece of information based at least in part on the query factor associated with the identified search query (See, e.g., Spec. p. 18, para. [0047], pp. 43-44, para. [0103]); determining a second ranking sequence of the merged query result based at least in part on the score (See, e.g., Spec. p. 18, para. [0047], p. 30, para. [0076], pp. 43-44, para. [0103], pp. 49-50, para. [0115]); and

presenting the merged query result to the user according to the second ranking sequence (See, e.g., Spec. p. 12, para. [0029], p. 20, para. [0052], pp. 42-43, para. [0101]).

Claim 25: A query system for ranking information (See, e.g., Spec. p. 3, para. [0006], p. 5, para. [0009], p. 9, para. [0019], and Figure 1), comprising: a computer processor for executing computer program instructions (See, e.g., Spec. p. 6, para. [0011-12]); a computer-readable storage medium having executable computer program instructions tangibly embodied thereon (See, e.g., Spec. p. 14, para. [0035], and Figure 1), the executable computer program instructions comprising instructions for: a module configured to receive 702 a plurality of query results of a plurality of search queries that were submitted separately (See, e.g., Spec. pp. 28-30, para. [0073, 75, 76], p. 42, para. [0100], and Figures 3, 7); a module configured to merge 704 the plurality of query results into a merged query result, the merged query result being associated with the plurality of search queries (See, e.g., Spec. pp. 28-30, para. [0073, 75, 76], p. 42, para. [0100], and Figures 3, 7); a module configured to determine a first ranking sequence of the merged query result (See, e.g., Spec. p. 30, para. [0076], and Figure 3); a module configured to present 706 the merged query result to a user according to the first ranking sequence (See, e.g., Spec. p. 12, para. [0029], p. 30, para. [0076], pp. 42-43, para. [0101], and Figure 3); a module configured to identify 708 an input signal from the user indicating an interest in a first piece of information in the merged query result (See, e.g., Spec. p. 43, para. [0102], and Figure 7); a module configured to identify 710 a search query from the plurality of search queries associated with the merged query result, the identified search query being associated with a query result including the first piece of information, the query result from among the plurality of query results (See, e.g., Spec. pp. 43-44, para. [0102-103], and Figure 7); a module configured to adjust a query factor associated with the identified search query responsive to the input signal (See, e.g., Spec. pp. 16-

18, para. [0043-45]); a module configured to locate a second piece of information in the query result associated with the identified search query (See, e.g., Spec. p. 18, para. [0047], pp. 43-44, para. [0103]); a module configured to determine a score for the second piece of information based at least in part on the query factor associated with the identified search query (See, e.g., Spec. p. 18, para. [0047], pp. 43-44, para. [0103]); a module configured to determine a second ranking sequence of the merged query result based at least in part on the score (See, e.g., Spec. p. 18, para. [0047], p. 30, para. [0076], pp. 43-44, para. [0103], pp. 49-50, para. [0115]); and a module configured to present the merged query result to the user according to the second ranking sequence (See, e.g., Spec. p. 12, para. [0029], p. 20, para. [0052], pp. 42-43, para. [0101]).

VI. *Grounds of Rejection to be Reviewed on Appeal*

The grounds of rejection to be reviewed on appeal are:

whether claims 1-2, 4-12, 15-18, and 21-26 were properly rejected under 35 USC § 102(e) as being anticipated by U.S. Patent No. 7,099,860 to Liu et al. ("Liu");

whether claim 3 was properly rejected under 35 USC § 103(a) as being unpatentable over Liu in view of U.S. Patent Application Publication No. 2003/0135490 to Barrett et al. ("Barrett"); and

whether claims 13, 14, 19, 20, 27, and 28 were properly rejected under 35 USC § 103(a) as being unpatentable over Liu.

VII. Argument

CLAIMS 1-2, 4-12, 15-18, AND 21-26 ARE NOT ANTICIPATED BY LIU

To render a claim unpatentable under § 102, a single prior art reference must expressly or inherently describe each and every element in the claim. *See Verdegaal Bros. v. Union Oil Co.*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Moreover, the "identical invention must be shown in as complete detail as is contained in the claim." *See Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The Examiner's rejection of claims 1-2, 4-12, 15-18, and 21-26 is improper because Liu fails to disclose multiple limitations recited by independent claims 1, 18, and 25.

Specifically, independent claim 1 recites the following:

A computer-implemented method for ranking information, comprising:

receiving a plurality of query results of a plurality of search queries that were submitted separately;

merging the plurality of query results into a merged query result, the merged query result being associated with the plurality of search queries;

determining a first ranking sequence of the merged query result;

presenting the merged query result to a user according to the first ranking sequence;

identifying an input signal from the user indicating an interest in a first piece of information in the merged query result;

identifying a search query from the plurality of search queries associated with the merged query result, the identified search query being associated with a query result including the first piece of information, the query result from among the plurality of query results;

adjusting a query factor associated with the identified search query responsive to the input signal;

locating a second piece of information in the query result associated with the identified search query;

determining a score for the second piece of information based at least in part on the query factor associated with the identified search query;

determining a second ranking sequence of the merged query result based at least in part on the score; and

presenting the merged query result to the user according to the second ranking sequence.

Thus, independent claim 1 beneficially recites a method for reranking a merged search result of multiple queries based on a user input.   Query results of a plurality of search queries that were submitted separately are merged into a merged query result, which is then ranked and presented in the ranked sequence.   A user input indicates an interest in a piece of information in the merged query result.   A search query associated with that piece of information is identified and a query factor for that search query is adjusted responsive to the input.   A score for a second piece of information associated with that search query is determined based on the adjusted query factor.   The merged query result is then reranked based on the score and presented in the reranked sequence.   The claimed technique is useful, for example, for dynamically presenting relevant search results to a user based on real-time user feedback.

Liu does not disclose at least the following limitations of claim 1: (1) "adjusting a query factor associated with the identified search query …; determining a score for the second piece of information based at least in part on the query factor associated with the identified search query", (2) "receiving a plurality of query results of a plurality of search queries that were submitted separately", and (3) "identifying a search query from the plurality of search queries associated with the merged query result, the identified search query being associated with a query result including the first piece of information".   Generally, Liu describes an image retrieval system that performs both keyword-based and content-based image retrieval.   See Liu, Abstract. Unlike the claimed invention, which is directed to ranking a merged query result formed of multiple separately submitted queries, Liu merely teaches conducting image searches for a single query and ranking the query result of the single query.   Nowhere does Liu disclose merging query results of a plurality of separately submitted search queries, identifying one such search

query associated with a query result including a piece of information, adjusting a query factor of

the query, and determining a score of another piece of information associated with the query as is

claimed in independent claim 1.

I. Liu does not disclose adjusting a query factor associated with a search query and determining a score of for a piece of information based on the query factor

Liu does not disclose "adjusting a query factor associated with the identified search

query" and "determining a score for the second piece of information based at least in part on the

query factor associated with the identified search query".   Liu discloses weights assigned to

keyword-image links in a semantic network, and increasing the weights based on user feedback.

Unlike the claimed query factor, which is associated with a search query and thus affects the

ranking of multiple pieces of information in the query result of the search query, the weight in

Liu is specific to the keyword and image connected by the associated link and unrelated to other

images.

In the Office Action, the Examiner cited Col. 3, lines 41-50 (3:41-50), 5:24-29, and 8:52-

64 of Liu for disclosing the adjusting step and 9:16-19, 5:24-29, 3: 41-48, and 10:32-36 (step 4)

for disclosing the above-cited determining step.   Liu at 3:41-50, 8:52-64, and 10:32-36

discloses selectively increasing weights assigned to keyword-image links based on user

feedback.   Liu at 5:24-29 discloses a semantic network of weighted keyword-image links.   Liu

at 9:16-19 discloses locating images with similar low-level features as images selected by the

user and displaying such images.   It appears the Examiner equated the weights of the keyword-

image links to both the claimed query factor associated with a search query and the claimed

score for a specific piece of information.   A weight of a particular keyword-image link in Liu is

specific to an image and is unrelated to weights of other keyword-image links.   Interpreting

both the claimed query factor and the claimed score as weights of keyword-image links would lead to an interpretation of the above-cited determining step as determining the weight of one keyword-image link based on the weight of another link. However, this interpretation contradicts Liu's own disclosure.

The unreasonableness of the above claim interpretation is more obvious in view of claim 2. Dependent claim 2 recites, among other claim elements, the following: "determining a first index score of the first piece of information in the search result associated with the identified search query, the first index score measuring how well keywords in the identified search query match the first piece of information". Thus, the claimed first index score, unlike the query factor associated with the identified search query, is specific to the first piece of information. In rejecting this element of claim 2, the Examiner equates the first index score to the weight of a keyword-image link. By indiscriminatorily treating the distinct claim features of query factor, score, and index score as equivalent to the weight of a keyword-image link, the Examiner rendered the above-cited claim limitations of claims 1 and 2 meaningless.

II. Liu does not disclose a plurality of separately submitted search queries

Liu does not disclose "receiving a plurality of query results of a plurality of search queries that were submitted separately". Liu merely teaches conducting image searches for a single query, and is silent about separately submitted search queries. In the Office Action, the Examiner cited 3:23-25, 3:32-34, 7:67-8:10, 12:13, 5:67-6:7, 8:11-14, and Figures 3 (reference 302) and 6-7 of Liu for disclosing the receiving step. Liu at 3:23-25 discloses that a user can specify a query using keywords and images. Liu at 3:32-34 discloses that user feedback is used to refine a search result and Figures 6-7 are corresponding screenshots. Liu at 5:67-6:7, 7:67-

8:10, and 12:13 discloses that one or more keywords can be extracted from a single user query. Figure 3 and the corresponding description describe a semantic network in which images and keywords are connected through keyword-image links. Weights can be assigned to the links to represent the degrees of relevance. Liu at 8:11-14 discloses that words similar to those in the user query may be simultaneously searched. The similar words are generated and searched to add additional images to the result set of the user query. Thus, like the rest of Liu, the cited sections and Figures do not disclose "a plurality of search queries that were submitted separately" as claimed.

In the Response to Arguments section of the Office Action, the Examiner unreasonably equated keywords extracted from a user query in Liu to the claimed plurality of separately submitted search queries. The keywords in Liu are extracted from a single user query (8:5-6) and thus are not "submitted separately". In addition, Liu explicitly discloses that a query can include multiple keywords (3:23-25). Thus, it is unreasonable to equate multiple keywords extracted from a single search query in Liu to the claimed plurality of separately submitted search queries. In addition, the Examiner equated the similar words disclosed in Liu at 8:11-14 that are simultaneously searched as the separately submitted search queries. These similar words are generated and searched to add additional images to the search set of the user query, and are not "search queries that were submitted separately".

III. Liu does not disclose identifying a search query from the plurality of separately submitted search queries

Liu does not disclose "identifying a search query from the plurality of search queries associated with the merged query result". As argued above, Liu does not disclose separately submitted search queries. It follows that Liu also does not disclose identifying a search query

from the separately submitted search queries. In the Office action, the Examiner cited 3:41-48, 10:32-36 (step 4), 8:57, 6:8-19, and Figures 3 (reference 304) and 6-7 of Liu for disclosing the above-cited identifying step. Liu at 3:41-48 discloses selectively increasing weights assigned to keyword-image links based on user feedback. Liu at 10:32-36 and 8:57 discloses increasing weights of keyword-image links between query keywords and images receiving positive feedback. As argued above, Figure 3 and 6-7, and the corresponding description similarly do not disclose identifying a search query from the plurality of separately submitted search queries as claimed.

In the Response to Arguments section, the Examiner argued that because Liu is able to identify a link between a keyword and an image selected by a user and assign a large weight to the link (8:55-57), Liu discloses the identifying step. As argued above, a keyword is not equivalent to a separately submitted search query, and thus identifying a keyword-image link is not equivalent to identifying a query from a plurality of separately submitted search queries. The Examiner also argued because Liu enables a user to provide relevant marks to individual images (9:60-61) and checks whether any query keyword (comparing to the similar words) is linked to an image that receives a positive feedback, Liu discloses the identifying step. However, Liu teaches conducting image searches using a single user query. Interpreting the identifying step as identifying that single user query is unreasonable and essentially renders this claim element meaningless. This unreasonableness is more apparent when applied to dependent claim 2, which recites "identifying the second search query from the plurality of search queries". The Examiner cited the same sections of Liu to support disclosure of the above claim element of claim 2, and interpreted the user query as both the identified search query and the second search query. Because it is clear from the claim language that the

identified search query and the second search query are distinct search queries, this interpretation is both improper and unreasonable.

Accordingly, one of ordinary skill would not find independent claim 1 anticipated by Liu. Independent claims 18 and 25 are not anticipated for at least the same reasons. The rejection of dependent claims 2, 4-12, 15-17, 21-24, and 26 is improper for at least the same reasons. Thus, the pending rejections of claims 1-2, 4-12, 15-18, and 21-26 are defective and their withdrawal is requested.

DEPENDENT CLAIM 3 IS NOT UNPATENTABLE OVER LIU AND BARRETT

As argued above with respect to the Rejection under 35 USC § 102(e), Liu fails to disclose at least the following limitations of claim 1: (1) "identifying a search query from the plurality of search queries associated with the merged query result, the identified search query being associated with a query result including the first piece of information", (2) "adjusting a query factor associated with the identified search query …; determining a score for the second piece of information based at least in part on the query factor associated with the identified search query" and (3) "receiving a plurality of query results of a plurality of search queries that were submitted separately". Barrett also fails to disclose the claimed limitations not taught by Liu, and the Examiner does not argue that Barrett does.

In view of the above, Liu and Barrett, whether considered individually or in combination, fail to disclose each and every limitation recited in independent claims 1. Thus, independent claim 1 is patentable over Liu and Barrett. Claim 3 is dependent on claim 1 and thus is allowable for at least the same reasons. Thus, the pending rejection of dependent claim 3 is defective and its withdrawal is requested.

DEPENDENT CLAIMS 13, 14, 19, 20, 27, AND 28 ARE NOT UNPATENTABLE OVER LIU

As argued above with respect to the Rejection under 35 USC § 102(e), Liu fails to disclose at least the following limitations of claim 1: (1) "identifying a search query from the plurality of search queries associated with the merged query result, the identified search query being associated with a query result including the first piece of information", (2) "adjusting a query factor associated with the identified search query …; determining a score for the second piece of information based at least in part on the query factor associated with the identified search query" and (3) "receiving a plurality of query results of a plurality of search queries that were submitted separately".

Accordingly, one of ordinary skill would not find independent claim 1 unpatentable over Liu. Independent claims 18 and 25 are not unpatentable over Liu for at least the same reasons. Dependent claims 13, 14, 19, 20, 27, and 28 are allowable for at least the same reasons. Thus, the pending rejections of dependent claims 13, 14, 19, 20, 27, and 28 are defective and their withdrawal is requested.

For the foregoing reasons, Appellants submit that the Examiner's rejections of claims 1-28 were erroneous, and respectfully request reversal.

Respectfully submitted,

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VIII. Claims Appendix

The claims involved in the instant appeal are as follows:

1.   A computer-implemented method for ranking information, comprising:

receiving a plurality of query results of a plurality of search queries that were submitted separately;

merging the plurality of query results into a merged query result, the merged query result being associated with the plurality of search queries;

determining a first ranking sequence of the merged query result;

presenting the merged query result to a user according to the first ranking sequence;

identifying an input signal from the user indicating an interest in a first piece of information in the merged query result;

identifying a search query from the plurality of search queries associated with the merged query result, the identified search query being associated with a query result including the first piece of information, the query result from among the plurality of query results;

adjusting a query factor associated with the identified search query responsive to the input signal;

locating a second piece of information in the query result associated with the identified search query;

determining a score for the second piece of information based at least in part on the query factor associated with the identified search query;

determining a second ranking sequence of the merged query result based at least in part on the score; and

presenting the merged query result to the user according to the second ranking sequence.

2.   The method of claim 1, wherein the first piece of information is included in a second query result associated with a second search query in the plurality of search queries, the second query result from among the plurality of query results, the method further comprising:

identifying the second search query from the plurality of search queries responsive to identifying the input signal;

determining a first index score of the first piece of information in the search result associated with the identified search query, the first index score measuring how well keywords in the identified search query match the first piece of information;

determining a second index score of the first piece of information in the second query result associated with the second search query, the second index score measuring how well keywords in the second search query match the first piece of information;

adjusting a second query factor associated with the second search query responsive to the input signal and based on the second index score, wherein adjusting the query factor associated with the identified search query comprises adjusting the query factor based on the first index score;

locating a third piece of information in the second query result associated with the second search query;

determining a second score for the third piece of information based at least in part on the second query factor associated with the second search query;

wherein determining the second ranking sequence of the merged query result further comprising determining the second ranking sequence of the merged query result based at least in part on the score for the second piece of information and the second score for the third piece of information.

3.   The method of claim 1, wherein the input signal comprises lack of selection of the first piece of information for at least a specified amount of time from when the first piece of information is displayed to the user.

4.   The method of claim 1, wherein the input signal comprises user activity associated with the first piece of information.

5.   The method of claim 4, wherein the user activity comprises one or more of viewing duration, scrolling, mouse movement, selection of links from the first piece of information, saving, printing, and bookmarking.

6.   The method of claim 4, wherein the input signal further comprises user activity associated with articles linked from the first piece of information.

7.   The method of claim 1, further comprising:
        identifying parts of text typed by the user, the parts including at least two of the
                following: nouns, verbs, and proper nouns; and
        generating the plurality of search queries based on the identified parts.

8.   The method of claim 1, wherein the input signal comprises a user rating.

9.   The method of claim 1, wherein one of the plurality of search queries comprises one of query type, query term, application, type of application, article type, and event type.

10.   The method of claim 9, wherein the query type comprises one of current sentence, current paragraph, text near the cursor, extracted terms, and identified entries.

11.   The method of claim 1, wherein the score comprises a relevance score.

12.   The method of claim 1, wherein the score comprises a popularity score.

13.   The method of claim 1, further comprising increasing a refresh rate of a display of the merged query result to the user responsive to receiving input signals at an increasing frequency.

14.   The method of claim 1, wherein the input signal is a first input signal and the interest is a first interest, further comprising:
        receiving a second input signal indicating a second interest in a third piece of
                information; and
        varying a refresh rate of a display of the merged query result to the user based at least in
                part on the duration between receiving the first input signal and the second input
                signal.

15.   The method of claim 1, wherein the input signal comprises multiple input signals.

16. The method of claim 1, further comprising:

generating the plurality of search queries based on a plurality of data streams; and

executing the plurality of search queries for the plurality of search results.

17. The method of claim 16, wherein the plurality of data streams comprise a data stream describing current contextual state of a user.

18. A computer program product having a computer-readable storage medium having executable computer program instructions tangibly embodied thereon for ranking information, the executable computer program instructions comprising instructions for:

receiving a plurality of query results of a plurality of search queries that were submitted separately;

merging the plurality of query results into a merged query result, the merged query result being associated with the plurality of search queries;

determining a first ranking sequence of the merged query result;

presenting the merged query result to a user according to the first ranking sequence;

identifying an input signal from the user indicating an interest in a first piece of information in the merged query result;

identifying a search query from the plurality of search queries associated with the merged query result, the identified search query being associated with a query result including the first piece of information, the query result from among the plurality of query results;

adjusting a query factor associated with the identified search query responsive to the input signal;

locating a second piece of information in the query result associated with the identified search query;

determining a score for the second piece of information based at least in part on the query factor associated with the identified search query;

determining a second ranking sequence of the merged query result based at least in part on the score; and

presenting the merged query result to the user according to the second ranking sequence.

19.   The computer program product of claim 18, the executable computer program instructions further comprising instructions for increasing a refresh rate of a display of the merged query result to the user responsive to receiving input signals at an increasing frequency.

20.   The computer program product of claim 18, wherein the input signal is a first input signal and the interest is a first interest, the executable computer program instructions further comprising instructions for:
        receiving a second input signal indicating a second interest in a third piece of
                information; and
        varying a refresh rate of a display of the merged query result to the user based at least in
                part on the duration between receiving the first input signal and the second input
                signal.

21.   The computer program product of claim 18, the executable computer program instructions further comprising instructions for:
        generating the plurality of search queries based on a plurality of data streams; and
        executing the plurality of search queries for the plurality of search results.

22.   The method of claim 1, wherein determining the second ranking sequence comprises:
        determining the second ranking sequence of at least some of the merged query result
                based at least in part on the score, the at least some of the merged query result
                associated with at least two search queries.

23.   The computer program product of claim 18, wherein the first piece of information is included in a second query result associated with a second search query in the plurality of search queries, the second query result from among the plurality of query results, wherein the executable computer program instructions further comprises instructions for:
        identifying the second search query from the plurality of search queries responsive to
                identifying the input signal;
        determining a first index score of the first piece of information in the search result
                associated with the identified search query, the first index score measuring how
                well keywords in the identified search query match the first piece of information;

determining a second index score of the first piece of information in the second query result associated with the second search query, the second index score measuring how well keywords in the second search query match the first piece of information;

adjusting a second query factor associated with the second search query responsive to the input signal and based on the second index score, wherein adjusting the query factor associated with the identified search query comprises adjusting the query factor based on the first index score;

locating a third piece of information in the second query result associated with the second search query;

determining a second score for the third piece of information based at least in part on the second query factor associated with the second search query;

wherein determining the second ranking sequence of the merged query result further comprising determining the second ranking sequence of the merged query result based at least in part on the score for the second piece of information and the second score for the third piece of information.

24.   The computer program product of claim 18, the executable computer program instructions further comprising instructions for:

generating the plurality of search queries associated with the merged query result; and

adding information from results of the plurality of search queries into the merged query result.

25.   A query system for ranking information, comprising:

a computer processor for executing computer program instructions;

a computer-readable storage medium having executable computer program instructions tangibly embodied thereon, the executable computer program instructions comprising instructions for:

a module configured to receive a plurality of query results of a plurality of search queries that were submitted separately;

a module configured to merge the plurality of query results into a merged query result, the merged query result being associated with the plurality of search queries;

a module configured to determine a first ranking sequence of the merged query result;

a module configured to present the merged query result to a user according to the first ranking sequence;

a module configured to identify an input signal from the user indicating an interest in a first piece of information in the merged query result;

a module configured to identify a search query from the plurality of search queries associated with the merged query result, the identified search query being associated with a query result including the first piece of information, the query result from among the plurality of query results;

a module configured to adjust a query factor associated with the identified search query responsive to the input signal;

a module configured to locate a second piece of information in the query result associated with the identified search query;

a module configured to determine a score for the second piece of information based at least in part on the query factor associated with the identified search query;

a module configured to determine a second ranking sequence of the merged query result based at least in part on the score; and

a module configured to present the merged query result to the user according to the second ranking sequence.

26. The query system of claim 25, wherein the first piece of information is included in a second query result associated with a second search query in the plurality of search queries, the second query result from among the plurality of query results, the executable computer program instructions further comprises instructions for:

a module configured to identify the second search query from the plurality of search queries responsive to identifying the input signal;

a module configured to determine a first index score of the first piece of information in the search result associated with the identified search query, the first index score measuring how well keywords in the identified search query match the first piece of information;

a module configured to determine a second index score of the first piece of information in the second query result associated with the second search query, the second index score measuring how well keywords in the second search query match the first piece of information;

a module configured to adjust a second query factor associated with the second search query responsive to the input signal and based on the second index score, wherein the module configured to adjust the query factor associated with the identified search query is further configured to adjust the query factor based on the first index score;

a module configured to locate a third piece of information in the second query result associated with the second search query;

a module configured to determine a second score for the third piece of information based at least in part on the second query factor associated with the second search query;

wherein the module configured to determine the second ranking sequence of the merged query result is further configured to determine the second ranking sequence of the merged query result based at least in part on the score for the second piece of information and the second score for the third piece of information.

27. The query system of claim 25, further comprising a module configured to increase a refresh rate of a display of the merged query result to the user responsive to receiving input signals at an increasing frequency.

28. The query system of claim 25, further comprising:

a module configured to receive a second input signal indicating a second interest in a third piece of information; and

a module configured to vary a refresh rate of a display of the merged query result to the user based at least in part on the duration between receiving the first input signal and the second input signal.

IX. Evidence Appendix

No evidence of the types described in 37 CFR § 41.37(c)(1)(ix) has been submitted during prosecution of the present application.

X. Related Proceedings Appendix

To the best knowledge of Appellants and Appellants' legal representative, there are no decisions rendered by a court or the Board that may directly affect, be affected by, or have a bearing on the decision of the Board in the instant appeal.